TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Patent Number	7,072,290
Issue Date	July 4, 2006
First Named Inventor	De et al
Application Number	10/080,099
Filing Date	February 21, 2002
Attorney Docket Number	I-2-0173.9US

ENCLOSURES   *(Check all that apply)*

[X] Fee Transmittal Form
   [ ] Fee Attached

[ ] Amendment/Reply
   [ ] After Final
   [ ] Affidavits/declaration(s)

[ ] Extension of Time Request

[ ] Express Abandonment Request

[ ] Information Disclosure Statement

[ ] Certified Copy of Priority Document(s)

[ ] Reply to Missing Parts/ Incomplete Application
   [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53

[ ] Drawing(s)

[ ] Licensing-related Papers

[ ] Petition

[ ] Petition to Convert to a Provisional Application

[ ] Power of Attorney, Revocation Change of Correspondence Address

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[ ] Request for Refund

[ ] CD, Number of CD(s) _____
   [ ] Landscape Table on CD

Remarks

[ ] After Allowance Communication to TC

[ ] Appeal Communication to Board of Appeals and Interferences

[ ] Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)

[ ] Proprietary Information

[ ] Status Letter

[X] Other Enclosure(s) (please Identify below):

Request for Certificate of Correction and Form PTO/SB/44

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

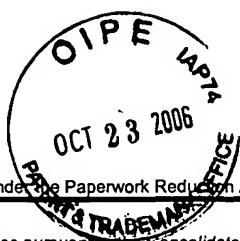| Firm Name	VOLPE AND KOENIG, P.C.		
Signature	*[signature]*		
Printed name	Robert D. Leonard		
Date	October 20, 2006	Reg. No.	57,204

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	*[signature]*		
Typed or printed name	Robert D. Leonard	Date	October 20, 2006

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PTO/SB/17 (01-06)
Approved for use through 07/31/2006.
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

Complete if Known	
Application Number	10/080,099
Filing Date	February 21, 2002
First Named Inventor	De et al.
Examiner Name	Jamal A. Fox
Art Unit	2664
Attorney Docket No.	I-2-0173.9US

TOTAL AMOUNT OF PAYMENT	($)	100.00

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 09-0435   Deposit Account Name: InterDigital Communications Corporation

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below   ☐ Charge fee(s) indicated below, **except for the filing fee**

☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17   ☒ Credit any overpayments

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FEE CALCULATION (All the fees below are due upon filing or may be subject to a surcharge.)

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	Small Entity Fee ($)	SEARCH FEES Fee ($)	Small Entity Fee ($)	EXAMINATION FEES Fee ($)	Small Entity Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - _____ = _____ x _____ =			0

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - _____ = _____ x _____ =			0

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims

Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____ - 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____				

4. OTHER FEE(S)

Non-English Specification, $130 fee (no small entity discount)

Fees Paid ($)

Other (e.g., late filing surcharge): Request for Certificate of Corrections   _____   100.00

SUBMITTED BY

Signature	/s/	Registration No. (Attorney/Agent) 57,204	Telephone 215-568-6400
Name (Print/Type) Robert D. Leonard			Date October 20, 2006

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT** of:	
De et al.	
Patent No.: 7,072,290	Our File: I-2-0173.9US
Issued: July 4, 2006	Date: October 20, 2006
Appln. No.: 10/080,099	
Filed: February 21, 2002	
For: SINGLE USER DETECTION BASE STATION	

REQUEST FOR CERTIFICATE OF CORRECTION

Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

A Certificate of Correction under 35 U.S.C. §§ 254, 255 and 37 C.F.R. §§1.322, 1.323 is requested for U.S. Patent No. 7,072,290. Correction of the following errors is requested.

ON THE FACE PAGE

At section (56), OTHER PUBLICATIONS, page 2, left column, line 1, before the word "Klein,", delete "Naja" and insert therefor --Anja--.

At section (56), OTHER PUBLICATIONS, page 2, left column, line 12, before "UMTS L1", delete "SMG0" and insert therefor --SMG2--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 2, before the word "User", delete "Sincle" and insert therefor --Single--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 3, after the word "Processing,", delete "Instutution" and insert therefor --Institution--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 4, before the word "Engineers,", delete "Lectrical" and insert therefor --Electrical--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 16, before "p.2,", delete "II," and insert therefor --I,--.

IN THE ABSTRACT

At section (57), ABSTRACT, page 1, right column, line 11, before the word "Data", delete "fourier transform" and insert therefor --Fourier Transform--.

IN THE DRAWINGS

At FIG.5, line 5, after the word "RESPONSE", delete "MATICES" and insert therefor --MATRICES--.

At FIG.6, line 5, after the word "RESPONSE", delete "MATICES" and insert therefor --MATRICES--.

IN THE SPECIFICATION

At column 1, line 59, before the word "Data", delete "fourier transform" and insert therefor --Fourier Transform--.

At column 2, line 6, after the words "chart of a", delete "fast fourier transform" and insert therefor --Fast Fourier Transform--.

At column 2, line 64, before "SUD", delete "a" and insert therefor --an--.

At column 6, line 59, before the word "structure", delete "Toplitz" and insert therefor --Toeplitz--.

At column 7, line 59, before the word "function", delete "hermetian" and insert therefor --Hermetian--.

At column 11, line 10, aftr the word "vector", delete "R_k" and insert therefore --$\mathbf{R_K}$--.

At column 11, delete equation 21 and insert therefor

$$\mathbf{R_K} = \begin{bmatrix} R_1 \\ R_2 \\ \vdots \\ R_k \end{bmatrix}$$

At column 11, delete Equation 22, and insert therefor--R(k+1)$\mathbf{d}$(k+1) = [$H^H\mathbf{r}$]$_{k+1}$--.

At column 11, line 26, after "H^Hr.", delete "d(k+1)" and insert therefor --$\mathbf{d}$(k+1)--.

At column 11, line 27, after the word "vector", delete "d_1(k+1)" and insert therefor --$\mathbf{d}_1$(k+1)--.

At column 11, delete Equation 23 and insert therefor --$\mathbf{d}$(k+1) = $\begin{bmatrix} \mathbf{d}_1(k+1) \\ d_2(k+1) \end{bmatrix}$--.

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At column 11, delete Equation 24, and insert therefor $--R(k+1) = \begin{bmatrix} R(k) & \vdots & E_k \mathbf{R_k} \\ \cdots & \vdots & \cdots \\ \mathbf{R_k^H} E_k & \vdots & R_o \end{bmatrix} --.$

At column 11, delete Equation 25, and insert therefor

$$-- \begin{bmatrix} R(k-1) & \vdots & E_{k-1} \mathbf{R_{k-1}} \\ \cdots & \vdots & \cdots \\ \mathbf{R_{k-1}^H} E_{k-1} & \vdots & R_0 \end{bmatrix} \begin{bmatrix} \mathbf{y_1}(k) \\ y_2(k) \end{bmatrix} = - \begin{bmatrix} \mathbf{R_{k-1}} \\ R_k \end{bmatrix} --.$$

At column 11, delete Equation 26, and insert therefor $--y_1(k) = y(k-1) + y_2(k)E_{k-1}y(k-1)--.$

At column 11, delete Equation 27, and insert therefor $--y_2(k) = -\dfrac{[R_k + \mathbf{R_{k-1}^H} E_{k-1} \mathbf{y}(k-1)]}{[1 + \mathbf{R_{k-1}^H} \mathbf{y}(k+1)]} --.$

At column 11, delete Equation 28, and insert therefor $--y(k) = \begin{bmatrix} \mathbf{y_1}(k) \\ y_2(k) \end{bmatrix} --.$

At column 12, line 1, after the word "Using", delete "y(k), d(k+1)" and insert therefor --

y(k), **d**(k+1)--.

At column 12, delete Equation 29 and insert therefor $--\mathbf{d_1}(k+1) = \mathbf{d}(k) + d_2(k+1)E_k \mathbf{y}(k)--.$

At column 12, delete Equation 30 and insert therefor

$$--d_2(k+1) = \left| \frac{(H^H \mathbf{r})_{k+1} - \mathbf{R_k^H} E_k \mathbf{d}(k)}{1 + \mathbf{R_k^H} \mathbf{y}(k)} \right| --.$$

At column 12, delete Equation 31 and insert therefor $--\mathbf{d}(k+1) = \begin{vmatrix} \mathbf{d_1}(k+1) \\ d_2(k+1) \end{vmatrix} --.$

At column 12, line 15, delete line 15 and insert therefor

$--(H^H \mathbf{r})_{k+1}$ is the (k+1)th element of $H^H \mathbf{r}.--.$

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At column 12, line 16, before "is a solution", delete "d(N_S)" and insert therefor aa --**d**(N_S)--.

At column 12, delete Equation 32, and insert therefor --R**d** = H^H**r**--.

At column 12, line 21, after the word "vector", delete "d" and insert therefor --**d**--.

At column 12, line 24, before the words "are per", delete "R$_2$" and insert therefor --**R**$_2$--.

At column 12, delete Equation 33, and insert therefor --R(2) = $\begin{bmatrix} R_0 R_1 \\ R_1 R_0 \end{bmatrix}$, **R**$_2$ = $\begin{bmatrix} R_1 \\ R_2 \end{bmatrix}$--.

At column 12, line 47, before the words "in Equation", delete "R$_6$^{H}E$_6$y(k)" and insert therefor --**R**$_6$^{H}E$_6$y(k)--.

At column 12, lines 47-48, after the word "product", delete "R$_6$^{H}E$_6$d(k)" and insert therefor --**R**$_6$^{H}E$_6$**d**(k)--.

At column 13, lines 4 & 5, after the word "uses", delete "fast fourier transforms" and insert therefor --Fast Fourier Transforms--.

At column 14, delete Equation 38 and insert therefor --R$\hat{\mathbf{d}}$ + H^H**r**--.

At column 14, delete Equation 39, and insert therefor --$\hat{\mathbf{d}}$ = R^{-1}(H^H**r**)--.

At column 14, line 8, after the word "orthogonal," delete "discrete fourier transform" and insert therefor --Discrete Fourier Transform--.

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At column 14, line 21, after the word "Accordingly,", delete "$\hat{d}$" and insert therefor --$\hat{\mathbf{d}}$--.

At column 14, line 21, after the words "using a", delete "fourier transform" and insert therefor --Fourier Transform--.

At column 14, delete Equation 43 and insert therefor --$R^{-1} = \dfrac{1}{N_S^2} D^H \Delta^{-1}[D(H^H r)]$--.

At column 14, delete Equation 44 and insert therefor --$D^H \hat{\mathbf{d}} = \dfrac{1}{N_S} \Delta^{-1}[F(H^H r)]$ --.

At column 14, delete Equation 45a and insert therefor --$F(\hat{\mathbf{d}}) = \dfrac{F(H^H \mathbf{r})}{N_S F((R)_1)}$--.

At column 14, line 36, after the words "denotes a", delete "fourier transform" and insert therefor --Fourier Transform--.

At column 14, line 37, after the word "function.", delete "$F(H^H r)$" and insert therefor --$F(H^H r)$--.

At column 14, delete Equation 45b and insert therefor

--$F(H^H r) = N_c[F(h_1)F(r_1) + ... + F(h_N)F(r_N)]$--.

At column 14, line 43, after the words "Taking the", delete "inverse fourier transform" and insert therefor --Inverse Fourier Transform--.

At column 14, Table 4, line 56, delete " $F([R]_1) \cdot N_2 \log_2 N_S$" and insert therefor

-- $F([R]_1) \cdot N_S \log_2 N_S$--.

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At column 14, Table 4, line 61, delete "Per Burst Calculating $H^H r$" and insert therefor -- Per Burst Calculating $H^H \mathbf{r}$--.

At column 14, Table 4, line 64, delete "$F^{-1}(d) \cdot N_S log_2 N_S$" and insert therefor --$F^{-1}(\mathbf{d}) \cdot N_S log_2 N_S$ --.

At column 15, line 7, after the word "sampling", delete "r_1 is the even and r_2" and insert therefor -- $\mathbf{r}_1$ is the even and $\mathbf{r}_2$--.

At column 15, line 8, after the words "element of", delete "r_1" and insert therefor --$\mathbf{r}_1$--.

At column 15, line 10, after the words "element of", delete "r_2" and insert therefor --$\mathbf{r}_2$--.

At column 15, line 14, after the word "matrix", delete "r_{eff}" and insert therefor --$\mathbf{r}_{eff}$--.

At column 15, delete Equation 48 and insert therefor --$\mathbf{r}_{eff} = H_{eff} \, \mathbf{d} + \mathbf{n}$--.

At column 15, delete Equation 49 and insert therefor --$F(\mathbf{d}) = \dfrac{F(\mathbf{r}_{eff})}{F((H_{eff})_1)}$--.

At column 15, line 34, after the words "Using the", delete "inverse fourier transform" and insert therefor --Inverse Fourier Transform--.

At column 15, line 42, after the word "modified", delete "d" and insert therefor --$\mathbf{d}$--.

At column 15, line 43, before the words "The H", delete "$\tilde{d}$ " and insert therefor --$\tilde{\mathbf{d}}$ --.

At column 16, delete Equation 50 and insert therefor --$F(\tilde{\mathbf{d}}) = \dfrac{F(\mathbf{r})}{F((\sim H)_1)}$ --.

At column 16, line 35, after the words "value from", delete "$\tilde{d}$ " and insert therefor --$\tilde{\mathbf{d}}$ --.

At column 16, line 36, after the word "codes,", delete "d" and insert therefor --$\mathbf{d}$--.

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IN THE CLAIMS

At claim 1, column 17, line 5, after the words "and a", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 4, column 17, line 15, after the word "determining", insert --of--.

At claim 4, column 17, line 16, after the words "uses a", delete "fourier transform of a hermetian" and insert therefor --Fourier Transform of a Hermetian--.

At claim 5, column 17, line 19, after the word "determining", insert --of--.

At claim 5, column 17, line 20, after the words "uses of", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 6, column 17, line 23, after the word "column", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 7, column 17, lines 25-26, after the words "wherein the", delete "fourier transform is a fast fourier transform." and insert therefor --Fourier Transform is a Fast Fourier Transform.--.

At claim 8, column 17, lines 28-29, after the words "uses an", delete "inverse fast fourier transform" and insert therefor --Inverse Fast Fourier Transform.--.

At claim 9, column 18, lines 9-10, after the words "and a", delete "fourier transform" and insert therefor --Fourier Transform,--.

At claim 12, column 18, line 20, after the word "determining", insert --of--.

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At claim 12, column 18, lines 21-22, after the words "uses a", delete "fourier transform of a hermetian" and insert therefor --Fourier Transform of a Hermetian--.

At claim 13, column 18, line 25, after the words "uses a", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 14, column 18, line 29, after the word "column", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 15, column 18, lines 31-32, after the words "wherein the", delete "fourier transform is a fast fourier transform" and insert therefor --Fourier Transform is a Fast Fourier Transform--.

At claim 16, column 18, lines 34-35, after the words "uses an", delete "inverse fast fourier transform" and insert therefor --Inverse Fast Fourier Transform.--.

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REMARKS

Patentees believe that the above errors are of such a nature as to justify the issuance of a Certificate of Correction. Patentees have enclosed a completed Certificate of Correction Form PTO/SB/44.

Since at least one of the errors was caused by Applicants, please charge the surcharge fee of $100.00 to the Deposit Account of InterDigital Communications Corporation, Deposit Account No. 09-0435.

Patentees respectfully request that the Certificate of Correction be issued.

Respectfully submitted,

De et al.

By_____

Robert D. Leonard
Registration No. 57,204
(215) 568-6400

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103

RDL/dcb

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page __1__ of __12__

PATENT NO.   : 7,072,290

APPLICATION NO.: 10/080,099

ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103

OCT 27 2008

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page __2__ of __12__

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At FIG.5, line 5, after the word "RESPONSE", delete "MATICES" and insert therefor --MATRICES--.

At FIG.6, line 5, after the word "RESPONSE", delete "MATICES" and insert therefor --MATRICES--.

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At column 1, line 59, before the word "Data", delete "fourier transform" and insert therefor --Fourier Transform--.

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At column 2, line 64, before "SUD", delete "a" and insert therefor --an--.

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UNITED STATES PATENT AND TRADEMARK OFFICE
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Page ___3___ of ___12___

PATENT NO.   : 7,072,290

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ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 6, line 59, before the word "structure", delete "Toplitz" and insert therefor --Toeplitz--.

At column 7, line 59, before the word "function", delete "hermetian" and insert therefor --Hermetian--.

At column 11, line 10, aftr the word "vector", delete "R_k" and insert therefore --$\mathbf{R_K}$--.

At column 11, delete equation 21 and insert therefor

$$\mathbf{R_K} = \begin{bmatrix} R_1 \\ R_2 \\ \vdots \\ R_k \end{bmatrix}$$

At column 11, delete Equation 22, and insert therefor--$R(k+1)\mathbf{d}(k+1) = [H^H\mathbf{r}]_{k+1}$--.

At column 11, line 26, after "$H^H\mathbf{r}$.", delete "$d(k+1)$" and insert therefor --$\mathbf{d}(k+1)$--.

At column 11, line 27, after the word "vector", delete "$d_1(k+1)$" and insert therefor --$\mathbf{d}_1(k+1)$--.

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Page __4__ of __12__

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ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 11, delete Equation 23 and insert therefor $--\mathbf{d}(k+1) = \begin{bmatrix} \mathbf{d}_1(k+1) \\ d_2(k+1) \end{bmatrix}--.$

At column 11, delete Equation 24, and insert therefor $--R(k+1) = \begin{bmatrix} R(k) & \vdots & E_k \mathbf{R}_k \\ \cdots & \vdots & \cdots \\ \mathbf{R}_k^H E_k & \vdots & R_o \end{bmatrix}--.$

At column 11, delete Equation 25, and insert therefor

$$-- \begin{bmatrix} R(k-1) & \vdots & E_{k-1}\mathbf{R}_{k-1} \\ \cdots & \vdots & \cdots \\ \mathbf{R}_{k-1}^H E_{k-1} & \vdots & R_0 \end{bmatrix} \begin{bmatrix} \mathbf{y}_1(k) \\ y_2(k) \end{bmatrix} = - \begin{bmatrix} \mathbf{R}_{k-1} \\ R_k \end{bmatrix} --.$$

At column 11, delete Equation 26, and insert therefor $--y_1(k) = y(k-1) + y_2(k)E_{k-1}y(k-1)--.$

At column 11, delete Equation 27, and insert therefor $--y_2(k) = -\dfrac{[R_k + \mathbf{R}_{k-1}^H E_{k-1}\mathbf{y}(k-1)]}{[1 + \mathbf{R}_{k-1}^H \mathbf{y}(k+1)]} --.$

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Page __5__ of __12__

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At column 11, delete Equation 28, and insert therefor --$y(k) = \begin{bmatrix} \mathbf{y}_1(k) \\ y_2(k) \end{bmatrix}$--.

At column 12, line 1, after the word "Using", delete "y(k), d(k+1)" and insert therefor -- $y(k)$, $\mathbf{d}(k+1)$--.

At column 12, delete Equation 29 and insert therefor --$\mathbf{d}_1(k+1) = \mathbf{d}(k) + d_2(k+1)E_k y(k)$--.

At column 12, delete Equation 30 and insert therefor --$d_2(k+1) = \left| \dfrac{(H^H \mathbf{r})_{k+1} - \mathbf{R}_k^H E_k \mathbf{d}(k)}{1 + \mathbf{R}_k^H y(k)} \right|$--.

At column 12, delete Equation 31 and insert therefor --$\mathbf{d}(k+1) = \left| \begin{matrix} \mathbf{d}_1(k+1) \\ d_2(k+1) \end{matrix} \right|$--.

At column 12, line 15, delete line 15 and insert therefor --$(H^H \mathbf{r})_{k+1}$ is the (k+1)th element of $H^H \mathbf{r}$.--.

At column 12, line 16, before "is a solution", delete "d(N_S)" and insert therefor --$\mathbf{d}(N_S)$--.

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PATENT NO.   : 7,072,290

APPLICATION NO.: 10/080,099

ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 12, delete Equation 32, and insert therefor --$\mathbf{Rd} = \mathbf{H}^H\mathbf{r}$--.

At column 12, line 21, after the word "vector", delete "d" and insert therefor --$\mathbf{d}$--.

At column 12, line 24, before the words "are per", delete "R_2" and insert therefor --$\mathbf{R_2}$--.

At column 12, delete Equation 33, and insert therefor --$R(2) = \begin{bmatrix} R_0R_1 \\ R_1R_0 \end{bmatrix}$, $\mathbf{R_2} = \begin{bmatrix} R_1 \\ R_2 \end{bmatrix}$--.

At column 12, line 47, before the words "in Equation", delete "$R_6{}^H E_6 y(k)$" and insert therefor --$\mathbf{R_6}{}^H\mathbf{E_6}y(k)$--.

At column 12, lines 47-48, after the word "product", delete "$R_6{}^H E_6 d(k)$" and insert therefor --$\mathbf{R_6}{}^H\mathbf{E_6}\mathbf{d}(k)$--.

At column 13, lines 4 & 5, after the word "uses", delete "fast fourier transforms" and insert therefor --Fast Fourier Transforms--.

At column 14, delete Equation 38 and insert therefor --$\mathbf{R}\hat{\mathbf{d}} + \mathbf{H}^H\mathbf{r}$--.

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PATENT NO.   : 7,072,290

APPLICATION NO.: 10/080,099

ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 14, delete Equation 39, and insert therefor --$\hat{d} = R^{-1}(H^H r)$--.

At column 14, line 8, after the word "orthogonal," delete "discrete fourier transform" and insert therefor --Discrete Fourier Transform--.

At column 14, line 21, after the word "Accordingly,", delete "$\hat{d}$" and insert therefor --$\hat{d}$--.

At column 14, line 21, after the words "using a", delete "fourier transform" and insert therefor --Fourier Transform--.

At column 14, delete Equation 43 and insert therefor --$R^{-1} = \dfrac{1}{N_s^2} D^H \Delta^{-1}[D(H^H r)]$--.

At column 14, delete Equation 44 and insert therefor --$D^H \hat{d} = \dfrac{1}{N_s} \Delta^{-1}[F(H^H r)]$ --.

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PATENT NO. : 7,072,290

APPLICATION NO.: 10/080,099

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INVENTOR(S) : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 14, delete Equation 45a and insert therefor $-\text{F}(\hat{\mathbf{d}}) = \dfrac{F(H^{H}\mathbf{r})}{N_{S}F((R)_{1})} -$.

At column 14, line 36, after the words "denotes a", delete "fourier transform" and insert therefor --Fourier Transform--.

At column 14, line 37, after the word "function.", delete "$F(H^{H}r)$" and insert therefor --$F(H^{H}\mathbf{r})$--.

At column 14, delete Equation 45b and insert therefor
--$F(H^{H}\mathbf{r}) = N_{c}[F(h_{1})F(r_{1}) + ... + F(h_{N})F(r_{N})]$--.

At column 14, line 43, after the words "Taking the", delete "inverse fourier transform" and insert therefor --Inverse Fourier Transform--.

At column 14, Table 4, line 56, delete " $F([R]_{1}) \cdot N_{2}\log_{2}N_{S}$" and insert therefor
-- $F([R]_{1}) \cdot N_{S}\log_{2}N_{S}$--.

At column 14, Table 4, line 61, delete "Per Burst Calculating $H^{H}r$" and insert therefor
--Per Burst Calculating $H^{H}\mathbf{r}$--.

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PATENT NO.   : 7,072,290

APPLICATION NO.: 10/080,099

ISSUE DATE   : July 4, 2006

INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 14, Table 4, line 64, delete "$F^{-1}(d) \cdot N_S log_2 N_S$" and insert therefor --$F^{-1}(\mathbf{d}) \cdot N_S log_2 N_S$ --.

At column 15, line 7, after the word "sampling", delete "r_1 is the even and r_2" and insert therefor -- $\mathbf{r}_1$ is the even and $\mathbf{r}_2$--.

At column 15, line 8, after the words "element of", delete "r_1" and insert therefor --$\mathbf{r}_1$--.

At column 15, line 10, after the words "element of", delete "r_2" and insert therefor --$\mathbf{r}_2$--.

At column 15, line 14, after the word "matrix", delete "r_{eff}" and insert therefor --$\mathbf{r}_{eff}$--.

At column 15, delete Equation 48 and insert therefor --$\mathbf{r}_{eff} = H_{eff} \, \mathbf{d} + \mathbf{n}$--.

At column 15, delete Equation 49 and insert therefor --$F(\mathbf{d}) = \dfrac{F(\mathbf{r}_{eff})}{F((H_{eff})_1)}$--.

At column 15, line 34, after the words "Using the", delete "inverse fourier transform" and insert therefor --Inverse Fourier Transform--.

At column 15, line 42, after the word "modified", delete "d" and insert therefor --$\mathbf{d}$--.

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PATENT NO. : 7,072,290

APPLICATION NO.: 10/080,099

ISSUE DATE : July 4, 2006

INVENTOR(S) : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 15, line 43, before the words "The H", delete "$\tilde{d}$ " and insert therefor --$\tilde{d}$ --.

At column 16, delete Equation 50 and insert therefor --$F(\tilde{d}) = \dfrac{F(r)}{F((\sim H)_1)}$ --.

At column 16, line 35, after the words "value from", delete "$\tilde{d}$ " and insert therefor --$\tilde{d}$ --.

At column 16, line 36, after the word "codes,", delete "d" and insert therefor --**d**--.

IN THE CLAIMS

At claim 1, column 17, line 5, after the words "and a", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 4, column 17, line 15, after the word "determining", insert --of--.

At claim 4, column 17, line 16, after the words "uses a", delete "fourier transform of a hermetian" and insert therefor --Fourier Transform of a Hermetian--.

At claim 5, column 17, line 19, after the word "determining", insert --of--.

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INVENTOR(S) : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At claim 5, column 17, line 20, after the words "uses of", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 6, column 17, line 23, after the word "column", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 7, column 17, lines 25-26, after the words "wherein the", delete "fourier transform is a fast fourier transform." and insert therefor --Fourier Transform is a Fast Fourier Transform.--.

At claim 8, column 17, lines 28-29, after the words "uses an", delete "inverse fast fourier transform" and insert therefor --Inverse Fast Fourier Transform.--.

At claim 9, column 18, lines 9-10, after the words "and a", delete "fourier transform" and insert therefor --Fourier Transform,--.

At claim 12, column 18, line 20, after the word "determining", insert --of--.

At claim 12, column 18, lines 21-22, after the words "uses a", delete "fourier transform of a hermetian" and insert therefor --Fourier Transform of a Hermetian--.

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INVENTOR(S)   : De et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At claim 13, column 18, line 25, after the words "uses a", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 14, column 18, line 29, after the word "column", delete "fourier transform" and insert therefor --Fourier Transform--.

At claim 15, column 18, lines 31-32, after the words "wherein the", delete "fourier transform is a fast fourier transform" and insert therefor --Fourier Transform is a Fast Fourier Transform--.

At claim 16, column 18, lines 34-35, after the words "uses an", delete "inverse fast fourier transform" and insert therefor --Inverse Fast Fourier Transform.--.

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